

**Fang, X.L.;** Phillips, D.; Li, H.; Sivasithamparam, K.; and Barbetti, M. 2010. Fungal and oomycete pathogens associated with crown and root diseases of strawberry in Western Australia. *Phytopathology* 100:S35.

Strawberries are a high-value export crop in Western Australia (WA), constituting more than 70% of Australia's strawberry exports. Crown and root diseases pose an increasing challenge to strawberry production in WA, with more than 1 m plants p.a. dying from such diseases. Field surveys undertaken in 2008 showed that the percentage plant decline indices (%DI) across all sites ranged from 3 to 40. The mean level of plant decline across all sites rose sharply from a %DI of 13 in August to 39 in October. Based on morphological and molecular identification, the potential fungal and oomycete pathogens associated with crown and root diseases were *Fusarium oxysporum*, *Rhizoctonia* (*R. solani*, *Ceratobasidium* AG-A, AG-C, AG-I and other taxa of *Ceratobasidium*), *Cylindrocarpon destructans*, *Phoma exigua*, *Gnomonia fructicola*, *Phytophthora cactorum*, *Pythium ultimum* and *Macrophomina phaseolina*. *F. oxysporum* was most frequently isolated from crowns, at a frequency of 41%, and its incidence was strongly correlated with the severity of crown disease. *Rhizoctonia* and *C. destructans* were most frequently isolated from roots, at a frequency of 12% for each. There was a poor relationship between the incidence/severity of crown disease and root disease. This work not only demonstrates that strawberry production in WA is severely compromised by crown and root diseases, but implicates *Fusarium* wilt in particular as the major disease associated with the extensive plant deaths occurring in WA.